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## *Indian Standard*

# GLOSSARY OF TERMS RELATING TO TRANSPORT TRACTORS AND TRAILERS

### PART I BASIC TERMS

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# Indian Standard

## GLOSSARY OF TERMS RELATING TO TRANSPORT TRACTORS AND TRAILERS

### PART I BASIC TERMS

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# *Indian Standard*

## GLOSSARY OF TERMS RELATING TO TRANSPORT TRACTORS AND TRAILERS

### PART I BASIC TERMS

#### 0. FOREWORD

**0.1** This Indian Standard ( Part I ) was adopted by the Indian Standards Institution on 28 August 1975, after the draft finalized by the Transport Tractors and Trailers Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

**0.2** This standard has been prepared for the guidance of transport authorities, manufacturers, and users of transport tractors and trailers to enable them to interpret the common terms and to establish a generally recognized terminology to eliminate ambiguity in the use of various terms in this field.

**0.3** This standard ( Part I ) covers the basic terms of tractors and trailers. Part II of this standard covers the terms relating to dimensions and weights of transport tractors and trailers.

**0.4** While preparing this standard considerable assistance has been derived from the SAE Handbook published by the Society of Automotive Engineers of USA.

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#### 1. SCOPE

**1.1** This standard ( Part I ) defines basic terms relating to transport tractors and trailers.

**1.2** The terms defined in this standard do not include industrial, agricultural and crawler types of tractor or trailers.

#### 2. TERMINOLOGY

**2.1** Transport Tractor — The motor vehicle designed primarily either for drawing trailers ( in the case of full trailers ) or for simultaneously drawing and carrying part of the weight of a trailer ( in the case of semi-trailers ).

##### *2.1.1 Types of Transport Tractors*

**2.1.1.1 Cab-alongside-engine (CAE)** — Is one in which the driver's compartment and controls are located alongside the engine compartment.

**2.1.1.2 Cab-behind-engine (CBE)** — Is one in which the driver's compartment and controls are located at the rear of a hood enclosed engine.

**2.1.1.3 Cab-over-engine (COE)** — Is one in which all, or a substantial part of its engine, is located under the cab.

**2.2 Trailers** — Is a vehicle designed to carry loads, but without any motive power of its own.

**2.2.1** Figure 1 shows the different types of transport tractor and trailer combinations. It is based on the use of the digit system of identifying combinations by axles. In this system of identification each digit indicates the number of axles on a vehicle which is entirely supported on its own wheels such as a transport tractor or full trailer. The first digit refers to the tractor and the second single digit refers to a full trailer, while a second digit with *S*-prefix refers to semi-trailers.

*Example:*

2 — S1 indicates two axle tractor and one axle semi-trailer;

3 — 2 indicates three axle tractor and two axle full-trailer; and

2 — S1 — 2 indicates two axle tractor, one axle semi-trailer and two axle full trailer.

## **2.2.2 Types of Transport-Trailers**

**2.2.2.1 Semi-trailer** — A trailer equipped with one or more axles and so constructed that the front end and a substantial part of its own weight and that of its load rests upon the towing tractor ( see Fig. 1, type S1 and S2 ).

**2.2.2.2 Full-trailer** — A trailer constructed so that all its own weight and of the load it is carrying rests on its own wheels ( see Fig. 1, type 2 — 2 ).

**2.2.2.3 Balanced full-trailer** — A trailer in which the load carrying axle(s) is (are) located approximately under the centre line of the cargo body ( see Fig. 1, type 2 — 1 ).

**2.2.2.4 Trailer converter dolly** — A trailer with one or more axles equipped with a fifth wheel, a drawbar, and other parts necessary to convert a semi-trailer to a full-trailer.

**2.2.2.5 Pole trailer** — A trailer consisting of single central pole of steel with a carriage at each end. The carriages are fitted with poles and the trailer is usually adjustable in length. The purpose of this trailer is to transport long slender loads, such as, steel bars, electric poles or long structures.



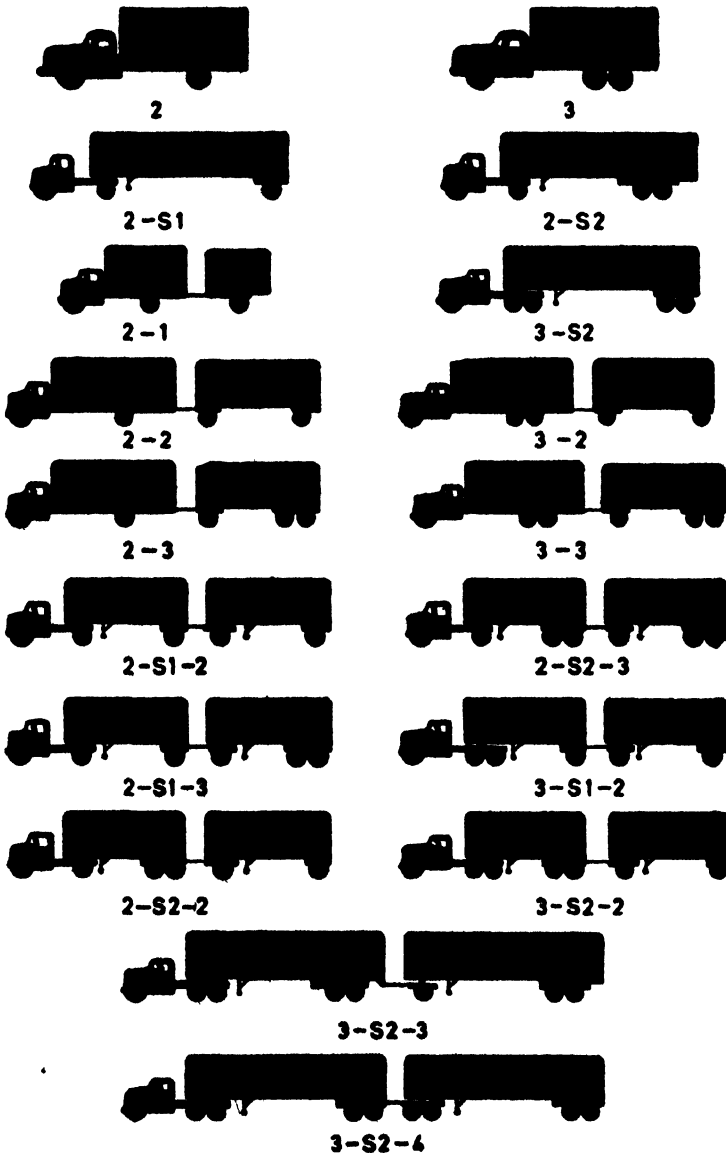


FIG. 1 TRACTOR TRAILER TYPES AS DESIGNATED BY CODE  
BASED ON AXLE ARRANGEMENT

**2.2.2.6 Articulated trailer** — A trailer where the conventional towing device is replaced by means of coupling to an articulation attachment on a tractor. Jockey wheels are provided at the articulation end of the trailer to support it when not coupled to a tractor. These may be retractable ( see Fig. 2 ).

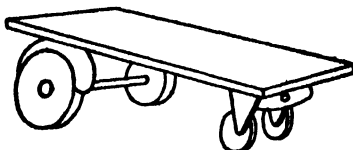


FIG. 2 ARTICULATED TRAILER

**2.2.2.7 Low-bed trailer** — Trailer with a flat loading platform but with a swan neck or a wheel arch both at the front and the rear end. The platform height may be lower than the trailer tyre diameter.

**2.2.2.8 Semi-low-bed-trailer** — Trailer with a flat loading platform but with a swan neck or a wheel arch at the front end. The height of the platform may be equal to or more than the trailer tyre diameter.

**2.2.2.9 Drop frame trailers — double drop frame** — The platform between the wheels is dropped as low as possible to facilitate loading from fitted outboard ( see Fig. 3 ).

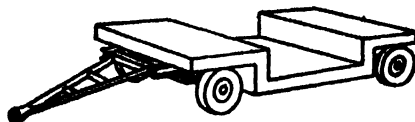


FIG. 3 DROP FRAME TRAILERS, DOUBLE DROP FRAME

**2.2.2.10 Drop frame trailer — single drop frame** — The platform is dropped behind the front wheels for loading either by means of a ramp or other suitable method. The rear wheels are usually fitted outboard ( see Fig. 4 ).



FIG. 4 DROP FRAME TRAILERS, SINGLE DROP FRAME

**2.2.2.11 Flat platform trailers** — Trailers with a flat loading platform without any swan necks or wheel arches.

**2.2.2.12 Swan neck (gooseneck)** — The raised portion of a trailer beyond the loading platform generally used to accommodate its own wheels or wheels of the towing vehicle.

**2.2.2.13 Wheel arch** — The raised portion on the platform of a trailer provided to accommodate the vertical travel of its own wheels.

**2.3 Transport Tractor-Trailer** — A combination of transport-tractor with trailer coupled together permanently or temporarily, designed primarily for the transportation of goods by road.

## 2.4 Towing Attachments

**2.4.1 Tow Eye** — The trailer part of the mechanical coupling of an independent trailer, normally attached to the pintle hook of the tractor ( see Fig. 5 ).

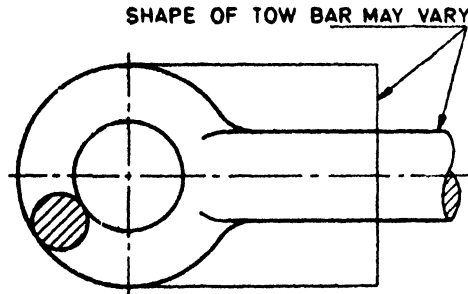


FIG. 5 TOW EYE

**2.4.2 Towing Hook (Pintle Hook)** — The tractor part of the mechanical coupling of an independent trailer normally attached to the tow eye of the trailer.

**2.4.3 Fifth Wheel** — A device used to connect a truck tractor to a semi-trailer and to permit articulation between the units. It is generally composed of a lower half, mounted on the tractor, consisting of a trunnion, plate and latching mechanism, for connection with a kingpin mounted on the semi-trailer ( see Fig. 6 ).

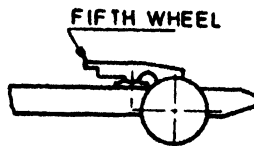
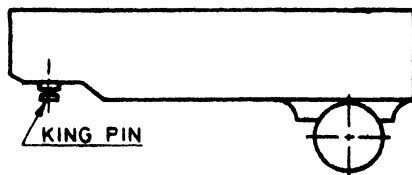


FIG. 6 FIFTH WHEEL

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**2.4.4 King Pin**—The trailer part of the mechanical coupling of a transport tractor-trailer normally attached to fifth wheel of the tractor ( see Fig. 7 ).



**FIG. 7 KING PIN**

# INTERNATIONAL SYSTEM OF UNITS ( SI UNITS )

## Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

## Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

## Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg.m/s <sup>2</sup>
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m <sup>2</sup>
Frequency	hertz	Hz	1 Hz = 1/s (s <sup>-1</sup> )
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	Pascal	Pa	1 Pa = 1 N/m <sup>2</sup>

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